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GB A 2154346   GB 1448141   EP A2 0127424
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GB A 2118341   GB 1356448   US 4114140
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(58) Field of search
G4H
Selected US specifications from IPC sub-class G06K

(54) **Credit card checking method and system**

(57) A credit card checking system wherein a credit card reader (10) is connected to a microprocessor (12) associated with a programmable memory (14) into which data identifying stopped credit cards can be inserted via a keyboard (16) or a modem link (18), the processor including a comparator for comparing the data read from an inserted card with the stored data, and a warning indicator (26) for indicating that an inserted card is a stopped card.
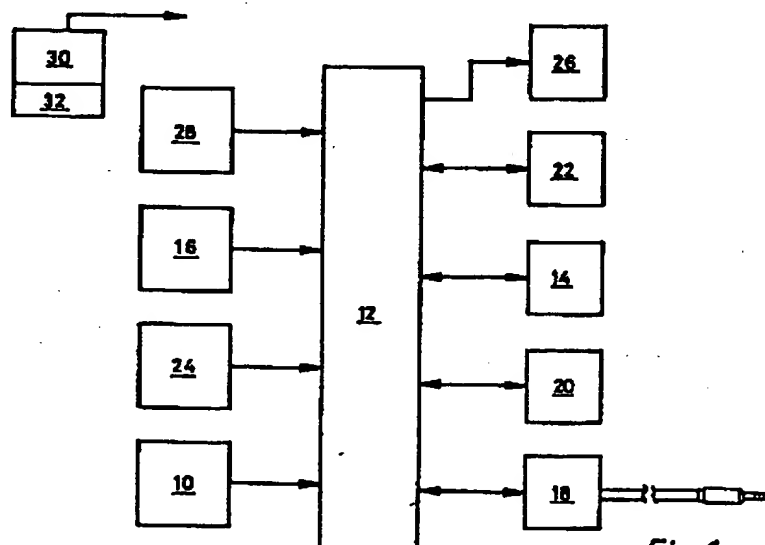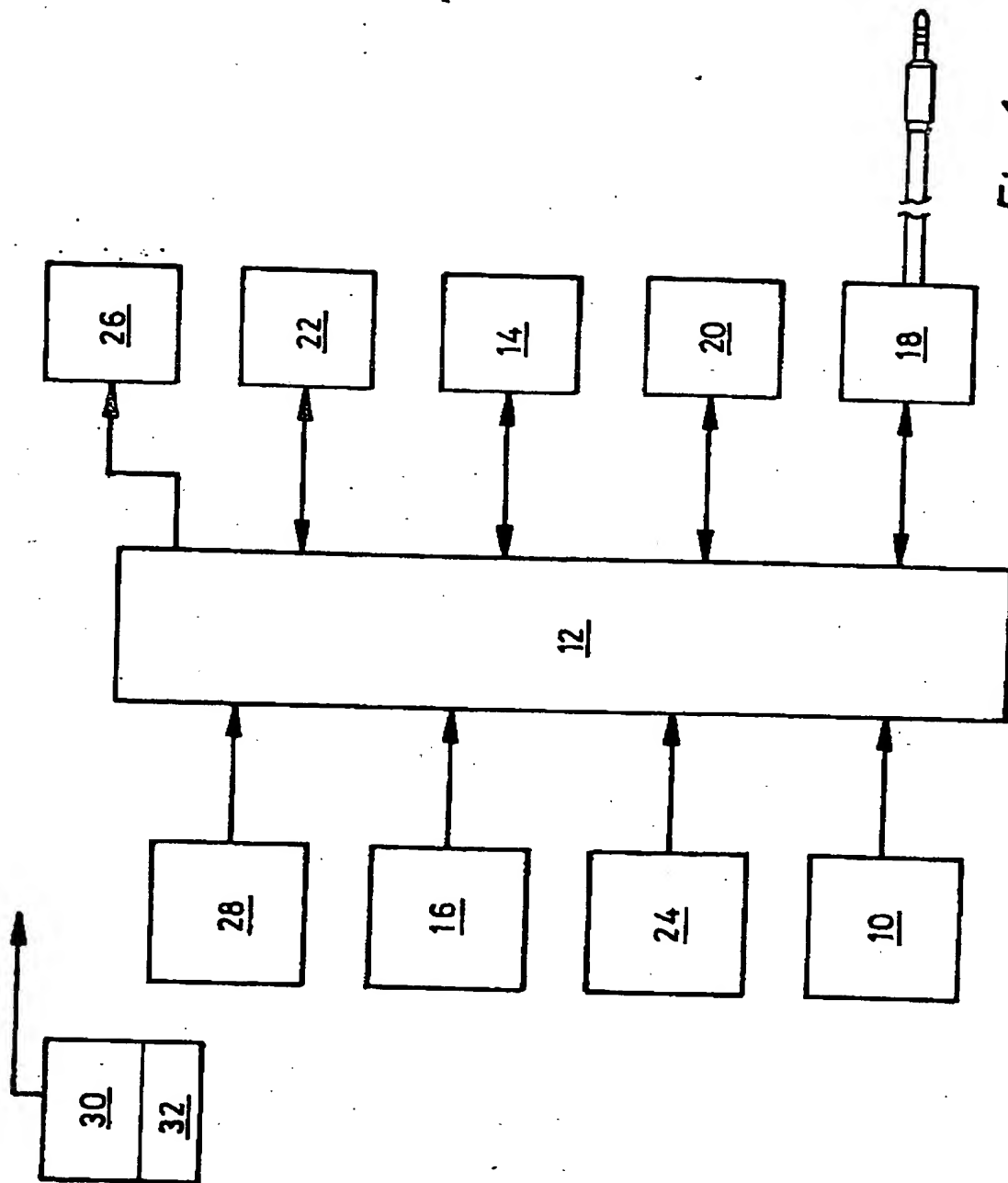

Fig.1

The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

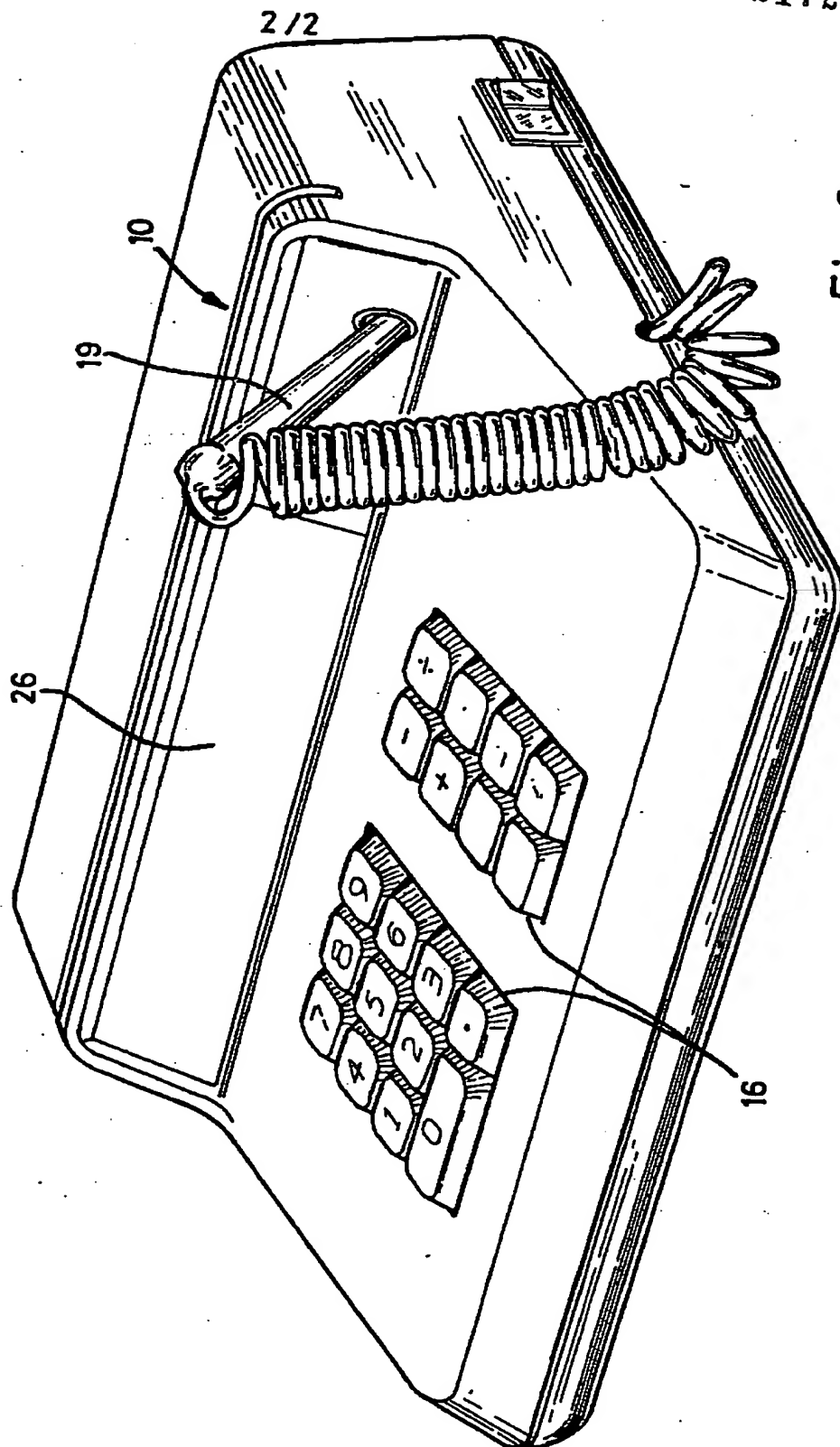2172131

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Fig.1

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Fig.2

SPECIFICATION

Credit card checking method and system

5 *Field of the invention*
This invention relates to a credit card checking
method and system.

Background to the invention
10 It is well known that finance companies
regularly lose large sums of money due to the
illegal use of stolen, lost and forged credit
cards. In some instances, losses are minim-
ised to a given amount per transaction, typi-
15 cally £50, because the retailer is required to
check with the finance company before ac-
cepting a card for a sale in excess of this
amount. However, this fact is generally well
known, and the user of a stopped card can
20 often still make numerous illegal purchases for
less than the limiting amount.
The numbers of most wanted stopped cards
are also the subject of regular lists distributed
by the finance companies to retailers. How-
25 ever, these are invariably late in distribution,
commonly as late as a month after the finance
company is first informed that a card is lost
or stolen. Moreover, retailers often fail to con-
sult the list when making a credit card sale.
30 It is therefore an aim of this invention to
provide an improved method and system for
checking credit cards.

The invention
35 According to one aspect of the invention, a
method of checking credit cards comprises
the steps of:—
  (a) storing a list of identification data relat-
ing to stopped credit cards in a memory;
40 (b) inserting a credit card in a card reader
to read the card identification incorporated in
the magnetic stripe thereof;
  (c) comparing the identification data read
from the card with the list of identification
45 data stored in the memory;
  (d) outputting a warning signal if there is
correspondence of the read data with data on
the list;
  (e) updating the memory to maintain sub-
50 stantial correspondence between the identifica-
tion data on the list and the stopped cards of
which a finance company are currently ad-
vised.
According to another aspect of the inven-
55 tion, a credit card checking system com-
prises:—
  (a) a programmable memory;
  (b) means for entering into the memory a
list of credit card identification data;
60 (c) a card reader adapted to read the iden-
tification data embodied in the magnetic stripe
of a credit card entered into the reader;
  (d) comparator means for comparing the
data read from a card entered into the reader
65 with the list of data;

  (e) means for outputting a warning signal if
the read data corresponds with data on the
stored list.
The comparator means is preferably incor-
70 porated in a microprocessor associated with
the programmable memory. An associated bar
code reader or keyboard enables entry via the
processor of data relating to stopped cards,
and the means for inputting data to the mem-
75 ory may also include a modem interface
through which data relating to stopped cards
can be downloaded directly by the finance
company.
The microprocessor may conveniently also
80 have an input from a real time clock and, if
desired, at least some of the data entered into
the memory may be stored in association with
a time recordal for example in conjunction
with data entry via a modem. The clock may
85 also be used to verify the expiry date of a
card.
The memory itself is preferably a non-vola-
tile store. A volatile store is preferably also
provided for use as a temporary store and/or
90 scratch pad.
The operation of the microprocessor system
may conveniently be controlled by software
residing in a monitoring means which includes
a read-only memory (ROM).
95 A preferred display is of the LCD type; the
output warning signal may be fed to this dis-
play, for example to display a warning mes-
sage, or to a flashing light or analogous signal
indicator or the like which may or may not be
100 incorporated in the LCD display.
The microprocessor may also receive an in-
put from a calculator interface so that, when
switched to a calculator mode, the system is
able to perform addition, subtraction, multipli-
105 cation and division processes relating to sales,
including VAT calculations. It is conceivable
that the calculator interface may communicate
with an electronic cash register and/or a prin-
ter to print a sales voucher.
110 The system will preferably have a power
supply unit which includes a battery back-up
enabling the retention of stored information in
the event of temporary failure of the mains
power supply.
115 The invention enables a retailer, by the sim-
ple and non-time consuming expedient of in-
serting a credit card into a card reader, to be
given immediate clearance on the entered
card. This clearance may be positively indi-
120 cated, or be apparent due to absence of a
warning signal.
Where an automatic telephone data link is
provided with the finance company for down-
loading data, it may be practicable to use the
125 same link for checking and providing clearance
on sales in excess of £50 or other appropriate
limiting sum, and this check may be made
automatic when an associated calculator unit
inputs a sales amount in excess of the limiting
130 figure. In such a case, a full register of the

cards of a particular credit company or bank may be stored, including the stopped cards list.

Description of drawings

A practical arrangement of credit card checking system in accordance with the invention is shown in the accompanying drawings, in which:—

Figure 1 is a block circuit diagram; and Figure 2 is a perspective view of a machine embodying the system.

Description of embodiment

In the illustrated system, a magnetic credit card reader 10 of the conventional insertion type with manual Track 2 wipe, but in the form of the basic mechanism only, is adapted to read the magnetic stripe on an entered credit card and feed an output signal, containing information identifying the card number, to a microprocessor 12, such as an eight bit 6502 CPU. The microprocessor 12 is in communication with a non-volatile store 14 which contains a list of data identifying stopped credit cards. A convenient non-volatile store has four (expandable to sixteen) memory banks, for example one for each finance company, each bank being capable of storing up to two thousand numbers and also being capable of upgrading to hold more numbers.

The numbers of stopped cards may be entered into the store 14 via a twenty four key keypad 16, and possibly also via a modem interface 18 through which identification numbers of stopped cards may be downloaded directly from a finance company. Preferably, however, the numbers of stopped cards can be entered via a bar code reader 19 (see Fig. 2), e.g. an optical reflection sensitive pen with decoding software for interleaved 2 of 5 bar codes, which reads a list of numbers supplied by the finance company in bar code form. A template to guide the pen over the printed bar code may be provided. A volatile store 20 is also provided at a temporary memory and/or scratch pad. A serial port for attachment of a modem may alternatively also enable attachment of a printer to print a point-of-sale docket.

The microprocessor 12 also communicates with a calculator interface 22, inputs for calculations being possible via the keyboard 16.

The microprocessor also receives an input from a real time clock 24, and provides outputs to an LCD display unit 26, for example a 2×32 character display, which normally displays the date and time, but also displays the results of calculations, carried out when the system is switched at the keyboard to the calculator mode.

The display 26 may also incorporate a warning indicator, such as a flashing light which operates when a comparator in the processor finds an entered and read card to pos-

sess an identifying number corresponding with data on the list of stopped cards. However, the warning indicator may be incorporated prominently elsewhere in the system, if desired. Most preferably, the display 26 will respond to an entered card by displaying an appropriate message indicative of the result of the check.

The system is controlled by a monitoring unit 28 wherein the control program resides in a ROM. This controls all system operations.

Supply of power is via a power unit 30 which includes a battery back-up 32, conveniently mains rechargeable, connected to those parts of the system where memory retention is required in the event of a temporary failure of the mains power supply.

In use, a retailer may be supplied with a machine (see Fig. 2) pre-programmed with a "Hotlist" of numbers of several thousand stopped credit cards. In the event of a credit card transaction, the retailer runs the card through the machine, which verifies the card and displays an appropriate message. The real time clock 24 may be employed for automatic verification of the expiry date of the card. Re-entry is provided for in the event of failure to read the card.

Updating of the stored Hotlist is by means of the bar code reader, which is used to enter fresh numbers into the memory from a list supplied by the finance company in bar code form. Deletion of numbers from the stored Hotlist is also possible in this way (or by use of the keyboard). In the event of memory overflow, oldest numbers on the stored Hotlist are deleted first. However, expansion to 256 memory banks, each storing 2000 card numbers, is readily possible, for example by means of an add-on unit.

It is apparent that the system may also serve to verify cheque guarantee cards, especially when bank cards are intended to serve a dual purpose.

Since all credit card transactions can be instantly verified at the point of use, i.e. the retailer, it should be possible to reduce the number of occasions in which authorisation direct from the finance company is required before acceptance of a card for performance of a transaction.

The above described and illustrated system is by way of example and may be modified in various ways within the scope of the invention hereinbefore defined.

CLAIMS

1. A method of checking credit cards comprising the steps of:—

(a) storing a list of identification data relating to stopped credit cards in a memory;

(b) inserting a credit card in a card reader to read the card identification incorporated in the magnetic stripe thereon;

(c) comparing the identification data read

from the card with the list of identification
data stored in the memory;

(d) outputting a warning signal if there is
correspondence of the read data with data on
5 the list;

(e) updating the memory to maintain sub-
stantial correspondence between the identifica-
tion data on the list and the stopped cards of
which a finance company are currently ad-
10 vised.

2. A method according to claim 1, includ-
ing the step of inserting data into the memory
and updating said data via a modem link.

3. A method according to claim 2, includ-
15 ing the step of using the modem link for the
additional purpose of verifying credit on an
inserted card.

4. A method of checking credit cards sub-
stantially as hereinbefore described.

20 5. A credit card checking system compris-
ing:—

(a) a programmable memory;

(b) means for entering into the memory a
list of credit card identification data;

25 (c) a card reader adapted to read the iden-
tification data embodied in the magnetic stripe
of a credit card entered into the reader;

(d) comparator means for comparing the
data read from a card entered into the reader
30 with the list of data;

(e) means for outputting a warning signal if
the read data corresponds with data on the
stored list.

6. A system according to claim 5, wherein
35 the comparator means is incorporated into a
microprocessor associated with the program-
mable memory.

7. A system according to claim 5 or claim
6, including a keyboard for entry of data into
40 the programmable memory.

8. A system according to any of claims 5
to 7, including a modem interface via which
data can be input to the programmable mem-
ory.

45 9. A system according to claim 6 or any
claim appendant thereto, wherein the micro-
processor incorporates a real time clock and
at least some data can be entered into the
memory in association with storage of time
50 recordal.

10. A system according to any of claims 5
to 9, wherein the programmable memory is a
non-volatile store and the system includes a
volatile store for use as a temporary store
55 and/or scratch pad.

11. A system according to claim 6 or any
claim appendant thereto, wherein the micro-
processor is controlled by a programmed
monitoring means which includes a read-only
60 memory.

12. A system according to any of claims 5
to 11; including an LCD display.

13. A system according to any of claims 5
to 12, including a bar code reader for entry of
65 information into the memory.

14. A system according to claim 6 or any
claim appendant thereto, wherein the micro-
processor has a calculator interface via which
the system can be switched to a calculator
70 mode.

15. A system according to claim 14,
wherein the calculator interface communicates
with a cash register.

16. A system according to any of claims 5
75 to 15, including a power supply means incor-
porating a battery back-up.

17. A credit card checking system sub-
stantially as hereinbefore described with refer-
ence to the accompanying drawings.